The effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order, with the exception of effluent limitations for BOD_5, TSS, copper, cyanide, lead, and zinc. The effluent limitations for these pollutants are less stringent than those in Order R5-2014-0011. This relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

a. **CWA section 402(o)(1) and 303(d)(4).** CWA section 402(o)(1) prohibits the establishment of less stringent WQBEL's "*except in compliance with section 303(d)(4).*" CWA section 303(d)(4) has two parts: paragraph (A) which applies to nonattainment waters and paragraph (B) which applies to attainment waters.

   i. For waters where standards are not attained, CWA section 304(d)(4)(A) specifies that any effluent limit based on a TMDL or other WLA may be revised only if the cumulative effect of all such revised effluent limits based on such TMDL's or WLA's will assure the attainment of such water quality standards.

   ii. For attainment waters, CWA section 303(d)(4)(B) specifies that a limitation based on a water quality standard may be relaxed where the action is consistent with the antidegradation policy.

   The Stanislaus River is considered an attainment water for BOD_5, TSS, copper, cyanide, lead, and zinc because the receiving water is not listed as impaired on the 303(d) list for these constituents.[1] As discussed in section IV.D.4, below, removal and relaxation of the effluent limits complies with federal and state antidegradation requirements. Thus, removal of the effluent limitations for cyanide and lead, removal of the maximum daily and mass-based effluent limitations for BOD_5 and TSS, and the relaxation of effluent limitations for copper and zinc from Order R5-2014-0011 meet the exception in CWA section 303(d)(4)(B).

b. **CWA section 402(o)(2).** CWA section 402(o)(2) provides several exceptions to the anti-backsliding regulations. CWA section 402(o)(2)(B)(i) allows a renewed, reissued, or modified permit to contain a less-stringent effluent limitation for a pollutant if information is available that was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and that would have justified the application of a less-stringent effluent limitation at the time of permit issuance.

   As described further in section IV.C.3.a of this Fact Sheet, updated information that was not available at the time Order R5-2014-0011 was issued indicates that cyanide and lead do not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. Additionally, updated information that was not available at the time Order R5-2014-0011 was issued indicates that less-stringent effluent limitations for copper and zinc, based on Facility performance and available dilution credits, satisfies the requirements in CWA section 402(o)(2). The updated information that supports the relaxation of effluent limitations for these constituents includes the following:

   i. **Copper.** Updated effluent data indicates that the Facility cannot consistently comply with the existing performance-based effluent limitations, and the Collierville Powerhouse Effluent Channel has sufficient dilution and assimilative capacity available for copper. Therefore, this Order includes less stringent

[1] "The exceptions in section 303(d)(4) address both waters in attainment with water quality standards and those not in attainment, i.e. waters on the section 303(d) impaired waters list." State Water Board Order WQ 2008-0006, Berry Petroleum Company, Poso Creek/McVan Facility.

effluent limitations for copper based on updated Facility performance and available dilution.

ii. **Cyanide.** Effluent and receiving water monitoring data collected between December 2017 and February 2018 indicates that cyanide in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the CTR criteria for the protection of aquatic life.

iii. **Lead.** Effluent and receiving water monitoring data collected between December 2017 and February 2018 indicates that lead in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the CTR criteria for the protection of aquatic life.

iv. **Zinc.** Updated effluent data indicates that the Facility cannot consistently comply with the existing performance-based effluent limitations, and the Collierville Powerhouse Effluent Channel has sufficient dilution and assimilative capacity available for zinc. Therefore, this Order includes less stringent effluent limitations for zinc based on updated Facility performance and available dilution.

c. **Flow.** Order R5-2014-0011 included flow as an effluent limit based on the design capacity of the proposed outfall. In accordance with Order R5-2014-0011, compliance with the flow limit was calculated using the mean of all daily flow values obtained within a calendar day. Flow is not a pollutant and therefore has been changed from an effluent limit to a discharge prohibition in this Order, which is an equivalent level of regulation. This Order is not less stringent because compliance with flow as a discharge prohibition will be calculated the same way as the previous Order. Flow as a discharge prohibition adequately regulates the Facility, does not allow for an increase in the discharge of pollutants, and does not constitute backsliding.

4. Antidegradation Policies

The permitted surface water discharge is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Antidegradation Policy. This Order provides for an increase in the volume and mass of pollutants discharged for copper and zinc. The increase will not have a significant impact on beneficial uses and will not cause a violation of water quality objectives. Compliance with these requirements will result in the use of BPTC of the discharge. The impact on existing water quality will be insignificant.

This Order relaxes the effluent limitations for copper and zinc based on the allowance of mixing zones in accordance with the Basin Plan, the SIP, U.S. EPA's *Water Quality Standards Handbook, 2nd Edition* (updated July 2007), and the TSD. As discussed in section IV.C.2.c of this Fact Sheet, the mixing zones comply with all applicable requirements and will not be adverse to the purpose of the state and federal antidegradation policies. Furthermore, the allowance of mixing zones for these pollutants will result in a minor increase in the discharge, resulting in less than 10 percent of the available assimilative capacity in the receiving water. According to U.S. EPA's memorandum on Tier 2 Antidegradation Reviews and Significance Thresholds, any individual decision to lower water quality for non-bioaccumulative chemicals that is limited to 10 percent of the available assimilative capacity represents minimal risk to the receiving water and is fully consistent with the objectives and goals of the Clean Water Act. The Central Valley Water Board finds that any lowering of water quality outside the mixing zone will be de minimus. Further, any change to water quality will not unreasonably affect present and anticipated beneficial uses and will not result in water

quality less than prescribed in State Water Board policies or the Basin Plan. The measures implemented required by this Order result in the implementation of BPTC. Thus, the relaxation of the effluent limitations for copper and zinc is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Antidegradation Policy.

This Order removes effluent limitations for cyanide and lead based on updated information, as described further in sections IV.C.3 and IV.D.3 of this Fact Sheet. The removal of effluent limitations for cyanide and lead will not result in a decrease in the level of treatment or control, or a reduction in water quality. Therefore, the Central Valley Water Board finds that the removal of the effluent limitations for cyanide and lead does not result in an allowed increase in pollutants or any additional degradation of the receiving water. Thus, the relaxation of effluent limitations is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Antidegradation Policy.

This Order also removes MDEL's and mass-based effluent limitations for BOD_5 and TSS based on 40 C.F.R part 122.45(d) and (f), and as described further in section IV.D.3 of this Fact Sheet. The removal of MDEL's and mass-based effluent limits for BOD_5 and TSS will not result in a decrease in the level of treatment or control, or a reduction in water quality because the WQBEL's for BOD_5 and TSS are based on the technical capability of the tertiary process to meet Title 22, or equivalent, disinfection requirements required to protect the beneficial uses of the receiving water. This is unchanged from the previous permit. Furthermore, both concentration-based AMEL's and AWEL's remain for BOD_5 and TSS, as well as an average daily discharge flow prohibition that limits the amount of flow that can be discharged daily. The combination of concentration-based effluent limits and a flow prohibition in this Order are equivalent to mass-based effluent limitations, which were redundant limits contained in previous Orders by multiplying the concentration-based effluent limits and permitted average daily discharge flow by a conversion factor to determine the mass-based effluent limitations. Therefore, the Central Valley Water Board finds that the removal of MDEL's and mass-based effluent limits for BOD_5 and TSS does not result in an allowed increase in pollutants or any additional degradation of the receiving water. Thus, the relaxation of effluent limitations is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Antidegradation Policy.

5. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based effluent limitations and WQBEL's for individual pollutants. The technology-based effluent limitations consist of restrictions on BOD_5, pH, and TSS. Restrictions on these constituents are discussed in section IV.B.2 of this Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. For BOD_5, pH, and TSS, both technology-based effluent limitations and WQBEL's are applicable. The more stringent of these effluent limitations are implemented by this Order. These limitations are not more stringent than required by the CWA.

WQBEL's have been derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant WQBEL's were derived from the CTR, the CTR is the applicable standard pursuant to 40 C.F.R. section 131.38. The procedures for calculating the individual WQBEL's for priority pollutants are based on the CTR implemented by the SIP, which was approved by U.S. EPA on 18 May 2000. Collectively, this Order's

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restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

Summary of Final Effluent Limitations
Discharge Point 001

Table F-13. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Conventional Pollutants							
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	--	--	--	TTC
	% Removal	85	--	--	--	--	CFR
pH	standard units	--	--	--	6.5	8.5	BP
Total Suspended Solids	mg/L	10	15	--	--	--	TTC
	% Removal	85	--	--	--	--	CFR
Priority Pollutants							
Copper, Total Recoverable	µg/L	9.2	--	18	--	--	CTR
Zinc, Total Recoverable	µg/L	100	--	210	--	--	CTR
Non-Conventional Pollutants							
Ammonia Nitrogen, Total (as N)	mg/L	13	23	--	--	--	NAWQC
	lbs/day[2]	91	160	--	--	--	
Nitrate Plus Nitrite (as N)	mg/L	40	69	--	--	--	MCL
Total Coliform Organisms	MPN/100 mL	--	2.2[3]	23[4]	--	240	Title 22
Acute Toxicity	% survival	--	--	70[5]/90[6]	--	--	BP

1 TTC – Based on tertiary treatment capability. These effluent limitations reflect the capability of a properly operated tertiary treatment plant.
CFR – Based on secondary treatment standards contained in 40 C.F.R part 133.
BP – Based on water quality objectives contained in the Basin Plan.
CTR – Based on water quality criteria contained in the California Toxics Rule and applied as specified in the SIP.
NAWQC – Based on U.S. EPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life.
MCL – Based on the Primary Maximum Contaminant Level.
Title 22 – Based on DDW Reclamation Criteria, CCR, division 4, chapter 3.

2 Based on an average daily discharge flow of 0.84 MGD.

3 Applied as a 7-day median effluent limitation.

4 Not to be exceeded more than once in any 30-day period.

5 70% minimum of any one bioassay.

6 90% median for any three consecutive bioassays.

E. Interim Effluent Limitations – Not Applicable

F. Land Discharge Specifications – Not Applicable

Land discharge specifications for the Facility are included in separate WDR Order 5-00-066 (as amended by Order R5-2010-0078).

G. Recycling Specifications – Not Applicable

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Recycling specifications for the Facility are included in separate WDR Order 5-00-066 (as amended by Order R5-2010-0078).

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

1. CWA section 303(a-c) requires states to adopt water quality standards, including criteria, where they are necessary to protect beneficial uses. The Central Valley Water Board adopted water quality criteria as water quality objectives in the Basin Plan. The Basin Plan states that "[t]*he numerical and narrative water quality objectives define the least stringent standards that the Regional Water Board will apply to regional waters in order to protect the beneficial uses.*" The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains receiving surface water limitations based on the Basin Plan numerical and narrative water quality objectives for bacteria, biostimulatory substances, color, chemical constituents, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, suspended sediment, settleable substances, suspended material, tastes and odors, temperature, toxicity, and turbidity.

Groundwater – Not Applicable

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 C.F.R. section 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 C.F.R. section 122.42, are provided in Attachment D. The Discharger must comply with all Standard Provisions and with those additional conditions that are applicable under 40 C.F.R. section 122.42.

Sections 122.41(a)(1) and (b) through (n) of 40 C.F.R. establish conditions that apply to all state-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) of 40 C.F.R. allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 C.F.R. section 123.25, this Order omits federal conditions that address enforcement authority specified in 40 C.F.R. sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

B. Special Provisions

1. Reopener Provisions

a. **Whole Effluent Toxicity (WET).** This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity through a site-specific Toxicity Reduction Evaluation (TRE) or, under certain circumstances, through participation in an approved Toxicity Evaluation Study (TES) in lieu of conducting a site-specific TRE. This Order may be reopened to include a new chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE and/or TES.

b. **Water Effects Ratio (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating criteria for applicable inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable. If the Discharger

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performs studies to determine site-specific WER's and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

c. **Drinking Water Policy.** On 26 July 2013, the Central Valley Water Board adopted Resolution R5-2013-0098, amending the Basin Plan and establishing a Drinking Water Policy. The State Water Board approved the Drinking Water Policy on 3 December 2013. This Order may be reopened to incorporate monitoring of drinking water constituents to implement the Drinking Water Policy.

d. **Ultraviolet Light (UV) Disinfection Operating Specifications.** UV system operating specifications are required to ensure that the UV system is operated to achieve the required pathogen removal. UV disinfection system specifications and monitoring and reporting requirements are required to ensure that adequate UV dosage is applied to the wastewater to inactivate pathogens (e.g., viruses) in the wastewater. UV dosage is dependent on several factors, such as UV transmittance, UV power setting, wastewater turbidity, and wastewater flow through the UV disinfection system. The UV specifications in this Order are based on the National Water Research Institute (NWRI) and American Water Works Association Research Foundation (AWWRF) "*Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse"* first published in December 2000 and revised as a Third Edition dated August 2012 (NWRI Guidelines). If the Discharger conducts a site-specific UV engineering study that identifies site-specific UV operating specifications that will achieve the virus inactivation required by Title 22 for disinfected tertiary recycled water, this Order may be reopened to modify the UV specifications, in accordance with Reopener Provision VI.C.1.f.

e. **Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS).** On 31 May 2018, as part of the CV-SALTS initiative, the Central Valley Water Board approved Basin Plan Amendments to incorporate new strategies for addressing ongoing salt and nitrate accumulation in the Central Valley. If approved by the State Water Board, the Office of Administrative Law, and U.S. EPA, the Amendments would impose certain new requirements on salt and nitrate discharges. If the Amendments ultimately go into effect, this Order may be amended or modified to incorporate any newly-applicable requirements.

2. Special Studies and Additional Monitoring Requirements

a. **Chronic Whole Effluent Toxicity (WET) Requirements.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at page III-8.00) Adequate chronic WET data is not available to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective.

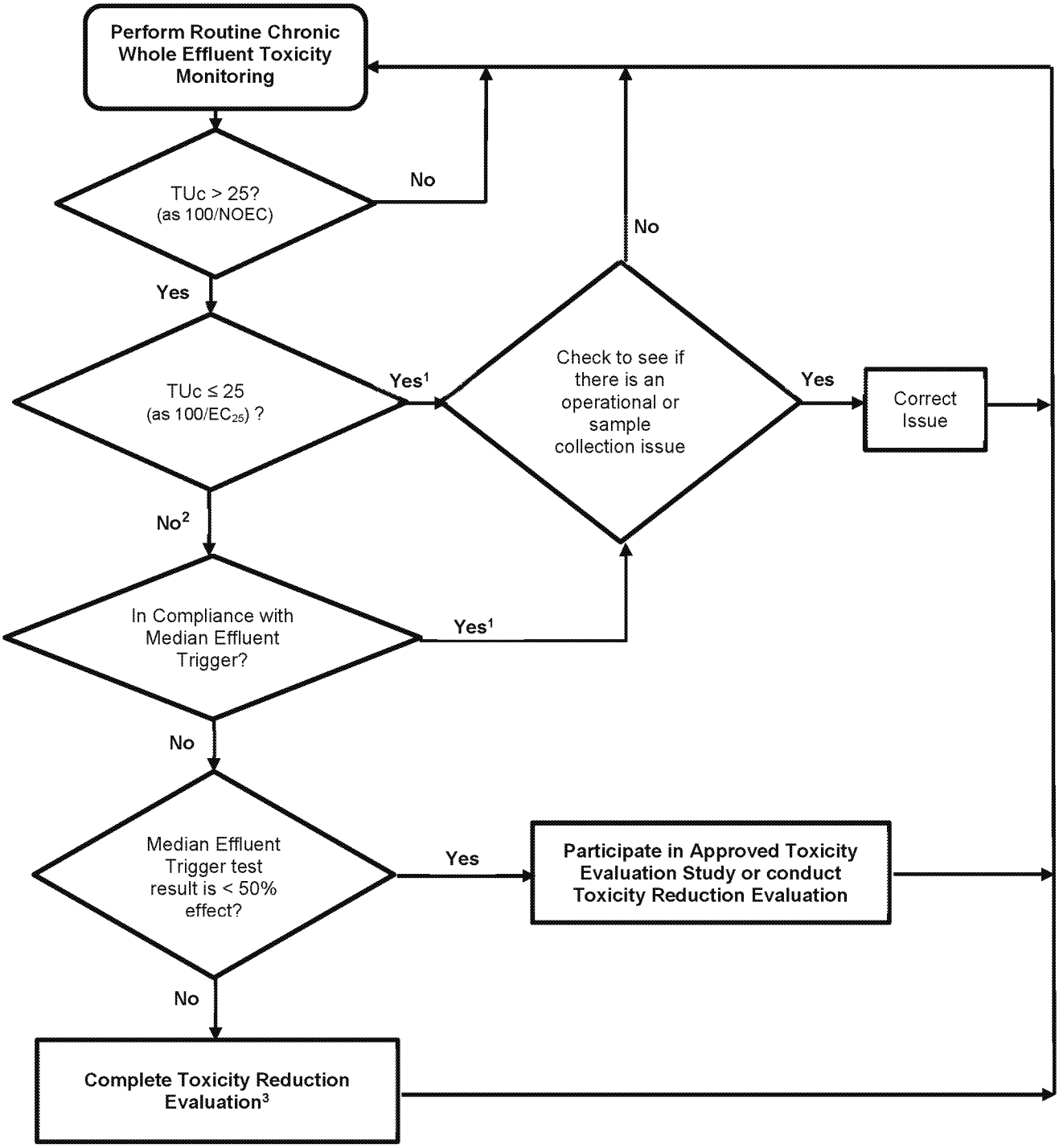
The MRP of this Order requires chronic WET monitoring for demonstration of compliance with the Basin Plan's narrative toxicity objective. If the discharge exceeds the chronic toxicity monitoring trigger, this provision requires the Discharger either participate in an approved TES or conduct a site-specific TRE.

A TES may be conducted in lieu of a TRE if the percent effect at 100 percent effluent is less than or equal to 50 percent. Determining the cause of toxicity can be challenging when the toxicity signal is low. Several Central Valley facilities with similar treatment systems have been experiencing intermittent low-level toxicity.

The dischargers have not been successful identifying the cause of the toxicity because of the low toxicity signal and the intermittent nature of the toxicity. Due to these challenges, CVCWA, in collaboration with staff from the Central Valley Water Board, has initiated a Special Study to Investigate Low Level Toxicity Indications (Group Toxicity Study). This Order allows the Discharger to participate in an approved TES, which may be conducted individually or as part of a coordinated group effort with other similar dischargers that are exhibiting toxicity. Although the current CVCWA Group Toxicity Study is related to low-level toxicity, participation in an approved TES is not limited to only low-level toxicity issues.

See the WET Monitoring Flow Chart (Figure F-2), below, for further clarification of the decision points for determining the need for TES/TRE initiation.

Figure F-2
WET Accelerated Monitoring Flow Chart



[1] The Discharger shall participate in an approved TES if the discharge has exceeded the chronic toxicity monitoring trigger twice or more in the past 12-month period and the cause is not identified and/or addressed.

[2] The Discharger may elect to take additional samples to determine the 3-sample median. The samples shall be collected at least one week apart and the final sample shall be within 6 weeks of the initial sample exhibiting toxicity.

[3] The Discharger may participate in an approved TES instead of a TRE if the Discharger has conducted a TRE within the past 12 months and has been unsuccessful in identifying the toxicant.

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3. **Best Management Practices and Pollution Prevention**

   a. **Land Disposal Maximization Program.** Since initiation of discharge to the Collierville Powerhouse Effluent Channel via the Collierville Tunnel is prohibited until the available maximization of land disposal has been demonstrated, this Order requires the Discharger to continue to irrigate the Forest Meadows Golf Course with reclaimed wastewater during the wintertime, when the conditions are suitable for irrigation. In addition, this Order requires the Discharger to utilize on-site leachfields and the emergency storage basin, when necessary, to prevent spills from the storage facility. Because efforts to maximize land application should occur every year, and because weather patterns are largely unpredictable, this Order requires the Discharger to submit an annual report documenting maximization of land application regardless of anticipation of a discharge being necessary during the following discharge season. The annual report shall include an estimate of the amount of carryover of wastewater in the storage reservoir beyond 1 October and the reasons the carryover is necessary, the number of acres utilized for wastewater irrigation during the summer irrigation period, and a detailed description of efforts taken to implement conservation measures and inflow/infiltration corrective action measures.

   b. **Salinity Evaluation and Minimization Plan.** The Discharger shall continue to implement a salinity evaluation and minimization plan to ensure adequate measures are developed and implemented by the Discharger to reduce the discharge of salinity to the Collierville Powerhouse Effluent Channel via the Collierville Tunnel.

4. **Construction, Operation, and Maintenance Specifications**

   a. **Filtration System Operating Specifications.** Turbidity is included as an operational specification as an indicator of the effectiveness of the filtration system for providing adequate disinfection. The tertiary treatment process utilized at this Facility is capable of reliably meeting a turbidity limitation of 2 NTU, as a daily average. Failure of the treatment system such that virus removal is impaired would normally result in increased particles in the effluent, which result in higher effluent turbidity and could impact UV dosage. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure, and rapid corrective action. The operational specification requires that turbidity prior to disinfection shall not exceed 2 NTU as a daily average; 5 NTU, more than 5 percent of the time within a 24-hour period; and an instantaneous maximum of 10 NTU.

   b. **Ultraviolet Light (UV) Disinfection System Operating Specifications.** This Order requires that wastewater be oxidized, coagulated, filtered, and adequately disinfected pursuant to DDW reclamation criteria, Title 22, or equivalent. To ensure that the UV disinfection system is operated to achieve the required pathogen removal, this Order includes effluent limits for total coliform organisms, filtration system operating specifications, and UV disinfection system operating specifications. Compliance with total coliform effluent limits alone does not ensure that pathogens in the municipal wastewater have been deactivated by the UV disinfection system. Compliance with the effluent limits and the filtration system and UV disinfection operating specifications demonstrates compliance with the equivalency to Title 22 disinfection requirement.

      The NWRI Guidelines include UV operating specifications for compliance with Title 22. For water recycling in accordance with Title 22, the UV system shall be an approved system included in the *Treatment Technology Report for Recycled Water*, December 2009 (or a later version, as applicable) published by DDW. The

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UV system shall also conform to all requirements and operating specifications of the NWRI Guidelines. A memorandum dated 1 November 2004 issued by DDW to Regional Water Board Executive Officers recommended that provisions be included in permits for water recycling treatment plants employing UV disinfection requiring dischargers to establish a fixed cleaning frequency of lamp sleeves, as well as specifying a minimum delivered UV dose to be maintained by the Discharger (per the NWRI Guidelines).

For facilities utilizing granular media filtration as part of the treatment process train upstream of UV disinfection, the NWRI Guidelines recommend a minimum hourly average UV dose of 100 mJ/cm^2. Therefore, this Order includes UV operating specifications requiring a minimum hourly average UV dose of 100 mJ/cm^2 and a minimum hourly average UV transmittance of 55 percent, per the NWRI Guidelines. If the Discharger conducts a site-specific UV engineering study that demonstrates a lower UV dose meets a Title 22 equivalent virus removal, this Order may be reopened to revise the UV operating specifications accordingly.

c. **Initiation of Surface Water Discharge.** The Discharger is proposing to construct an outfall to the Collierville Tunnel. Consistent with Order R5-2014-0011, this Order requires the Discharger to 1) demonstrate compliance with the final effluent and receiving water limitations; 2) provide certification of completion by the design engineer that the outfall pipeline to the Collierville Tunnel is operational; 3) comply with the requirement to establish an electronic system for operator notification for continuous recording device alarms; and 4) submit a request for surface water discharge prior to commencement of surface water discharges to the Collierville Tunnel.

5. Special Provisions for Publicly-Owned Treatment Works (POTWs)

a. **Collection System.** The State Water Board issued General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order 2006-0003-DWQ (General Order) on 2 May 2006. The State Water Board amended the MRP for the General Order through Order WQ 2013-0058-EXEC on 6 August 2013. The General Order requires public agencies that own or operate sanitary sewer systems with greater than 1 mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMP's) and report all sanitary sewer overflows (SSO's), among other requirements and prohibitions.

The General Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows that are more extensive, and therefore, more stringent than the requirements under federal standard provisions. The Discharger and public agencies that are discharging wastewater into the Facility's collection system were required to obtain enrollment for regulation under the General Order by 1 December 2006.

b. **Continuous Monitoring Systems.** This Order, and the MRP that is a part of this Order, require that certain parameters be monitored on a continuous basis. The Facility is not staffed 24 hours a day. Permit violations or system upsets can go undetected during this period. The Discharger has a system in place to automatically contact Facility operators in the event alarms are generated at the Facility. The Discharger is required to establish an electronic system for operator notification based on continuous recording device alarms. For any future Facility upgrades, the Discharger shall upgrade the continuous monitoring and notification system simultaneously.

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6. **Other Special Provisions**

   a. **Title 22, or Equivalent, Disinfection Requirements.** Consistent with Order R5-2014-0011, this Order requires the discharge to be oxidized, filtered, and adequately disinfected pursuant to DDW reclamation criteria, Title 22, or equivalent.

   b. **Notification of Surface Water Discharge.** This Order only allows discharges to surface water under certain conditions. In order to confirm that the conditions for surface water discharges are met and to alert Central Valley Water Board staff of an impending discharge to surface water, this Order requires the Discharger to notify the Central Valley Water Board in writing at least 1 week prior to initiation of a proposed surface water discharge.

7. **Compliance Schedules – Not Applicable**

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

CWA section 308 and 40 C.F.R. sections 122.41(h), (j)-(l), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Central Valley Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The MRP, Attachment E of this Order, establishes monitoring, reporting, and recordkeeping requirements that implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this Facility.

A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the wastewater and to assess compliance with effluent limitations (e.g., BOD_5 and TSS reduction requirements). The monitoring frequencies for flow (continuous), BOD_5 (weekly), pH (weekly), and TSS (weekly) have been retained from Order R5-2014-0011.

B. Effluent Monitoring

1. Pursuant to the requirements of 40 C.F.R. section 122.44(i)(2), effluent monitoring is required for all constituents with effluent limitations or discharge prohibitions. Effluent monitoring is necessary to assess compliance with effluent limitations and discharge prohibitions, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream and groundwater.

2. Effluent monitoring frequencies and sample types for flow (continuous), BOD_5 (three times per week), pH (continuous), TSS (three times per week), copper (monthly), zinc (monthly), ammonia (monthly), chlorine residual (daily, when used in the treatment process for maintenance purposes), dissolved oxygen (daily), electrical conductivity (monthly), hardness (monthly), nitrate (monthly), and temperature (monthly) have been retained from Order R5-2014-0011 to determine compliance with effluent limitations and discharge prohibitions for these parameters.

3. Consistent with Order R5-2014-0011, this Order requires the Discharger to demonstrate compliance with all effluent limitations prior to allowing discharges to surface water. Therefore, this Order requires monitoring for copper and zinc three times per year (in December, February, and April), regardless of whether a discharge to surface waters is occurring.

4. Monitoring data collected over the term of Order R5-2014-0011 for cyanide and lead did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, specific monitoring requirements for these parameters have not been retained from Order R5-2014-0011.

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5. Order R5-2014-0011 required monthly effluent monitoring for nitrate. As discussed in section IV.C.3 of this Fact Sheet, this Order establishes effluent limitations for nitrate plus nitrite as a single parameter. Therefore, this Order establishes monthly monitoring requirements for nitrite, in addition to existing effluent monitoring requirements for nitrate, in order to determine compliance with the applicable effluent limitations for nitrate plus nitrite as a single parameter.

6. In accordance with section 1.3 of the SIP, periodic monitoring is required for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. This Order requires effluent monitoring for priority pollutants and other constituents of concern three times during the year 2021, in January, March, and May. This monitoring frequency has been retained from Order R5-2014-0011. See section IX.B of the MRP (Attachment E) for more detailed requirements related to performing priority pollutant monitoring.

7. Water Code section 13176, subdivision (a), states: "*The analysis of any material required by [Water Code sections 13000-16104] shall be performed by a laboratory that has accreditation or certification pursuant to Article 3 (commencing with section 100825) of chapter 4 of part 1 of division 101 of the Health and Safety Code.*" DDW accredits laboratories through its Environmental Laboratory Accreditation Program (ELAP).

   Section 13176 cannot be interpreted in a manner that would violate federal holding time requirements that apply to NPDES permits pursuant to the CWA (Wat. Code §§ 13370, subd. (c), 13372, 13377). Section 13176 is inapplicable to NPDES permits to the extent it is inconsistent with CWA requirements (Wat. Code § 13372, subd. (a)). The holding time requirements are 15 minutes for chlorine residual, dissolved oxygen, and pH, and immediate analysis is required for temperature (40 C.F.R. § 136.3(e), Table II). Due to the location of the Facility, it is both legally and factually impossible for the Discharger to comply with section 13176 for constituents with short holding times.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Consistent with Order R5-2014-0011, annual 96-hour bioassay testing is required, when discharging to surface water, to demonstrate compliance with the effluent limitation for acute toxicity.

2. **Chronic Toxicity.** Consistent with Order R5-2014-0011, annual chronic WET testing is required, when discharging to surface water, to demonstrate compliance with the Basin Plan's narrative toxicity objective.

D. Receiving Water Monitoring

1. Surface Water

a. Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream.

b. In accordance with section 1.3 of the SIP, periodic monitoring is required for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. This Order requires upstream receiving water monitoring for priority pollutants and other pollutants of concern at Monitoring Location RSW-001 three times during the year 2021, in January, March, and May, concurrent with effluent monitoring, in order to collect data to conduct an RPA for the next permit renewal. See section IX.B of the MRP (Attachment E) for more detailed requirements related to performing priority pollutant monitoring.

2. Groundwater – Not Applicable

Groundwater monitoring requirements are included in separate WDR Order 5-00-066 (as amended by Order R5-2010-0078).

E. Other Monitoring Requirements

1. Recycling Monitoring

Prohibition III.F of this Order prohibits discharges to the Collierville Tunnel when less than 3.9 feet of freeboard is available in the Forest Meadows Golf Course storage reservoir. Therefore, consistent with Order R5-2014-0011, this Order requires weekly monitoring of the freeboard in the storage reservoir during periods of discharge to the Collierville Tunnel to determine compliance with Prohibition III.F.

2. Filtration System Monitoring

Filtration system monitoring and reporting are required to determine compliance with the operation specifications for turbidity in Special Provision VI.C.4.a. Consistent with Order R5-2014-0011, this Order requires continuous turbidity monitoring at Monitoring Location FIL-001 to ensure the operational specifications for turbidity are being met prior to the disinfection process.

3. UV Disinfection System Monitoring

UV system monitoring and reporting are required to ensure that the UV system is operated to adequately inactivate pathogens in the tertiary treated wastewater. UV disinfection system monitoring is imposed to achieve equivalency to requirements established by DDW and the NWRI Guidelines.

4. Discharge Monitoring Report-Quality Assurance (DMR-QA) Study Program

Under the authority of section 308 of the CWA (33 U.S.C. § 1318), U.S. EPA requires all dischargers under the NPDES Program to participate in the annual DMR-QA Study Program. The DMR-QA Study evaluates the analytical ability of laboratories that routinely perform or support self-monitoring analyses required by NPDES permits. There are two options to satisfy the requirements of the DMR-QA Study Program: (1) The Discharger can obtain and analyze a DMR-QA sample as part of the DMR-QA Study; or (2) Per the waiver issued by U.S. EPA to the State Water Board, the Discharger can submit the results of the most recent Water Pollution Performance Evaluation Study from their own laboratories or their contract laboratories. A Water Pollution Performance Evaluation Study is similar to the DMR-QA Study. Thus, it also evaluates a laboratory's ability to analyze wastewater samples to produce quality data that ensure the integrity of the NPDES Program. The Discharger shall submit annually the results of the DMR-QA Study or the results of the most recent Water Pollution Performance Evaluation Study to the State Water Board. The State Water Board's Quality Assurance Program Officer will send the DMR-QA Study results or the results of the most recent Water Pollution Performance Evaluation Study to U.S. EPA's DMR-QA Coordinator and Quality Assurance Manager.

VIII. PUBLIC PARTICIPATION

The Central Valley Water Board has considered the issuance of WDR's that will serve as an NPDES permit for Forest Meadows Wastewater Reclamation Plant. As a step in the WDR adoption process, the Central Valley Water Board staff has developed tentative WDR's and has encouraged public participation in the WDR adoption process.

A. Notification of Interested Persons

The Central Valley Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDR's for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through the following **<Describe Notification Process (e.g., newspaper name and date)>**

The public had access to the agenda and any changes in dates and locations through the Central Valley Water Board's website at:

http://www.waterboards.ca.gov/centralvalley/board_info/meetings/

B. Written Comments

Interested persons were invited to submit written comments concerning tentative WDR's as provided through the notification process. Comments were due either in person or by mail to the Executive Office at the Central Valley Water Board at the address on the cover page of this Order.

To be fully responded to by staff and considered by the Central Valley Water Board, the written comments were due at the Central Valley Water Board office by 5:00 p.m. on **<Date>**.

C. Public Hearing

The Central Valley Water Board held a public hearing on the tentative WDR's during its regular Board meeting on the following date and time and at the following location:

Date:	**4/5 October 2018**
Time:	8:30 a.m.
Location:	Redding City Hall 777 Cypress Avenue Redding, CA 96001

Interested persons were invited to attend. At the public hearing, the Central Valley Water Board heard testimony pertinent to the discharge, WDR's, and permit. For accuracy of the record, important testimony was requested in writing.

D. Reconsideration of Waste Discharge Requirements

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water board to review the action in accordance with Water Code section 13320 and CCR, Title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., within 30 calendar days of the date of adoption of this Order at the following address, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

Or by email at waterqualitypetitions@waterboards.ca.gov

For instructions on how to file a petition for review, see
http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml

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E. Information and Copying

The ROWD, other supporting documents, and comments received are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Central Valley Water Board by calling (916) 464-3291.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDR's and NPDES permit should contact the Central Valley Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Danielle Siebal at (916) 464-4843.

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Ammonia Nitrogen, Total (as N)	mg/L	6.9	<0.0030	2.14	2.14[1]	5.08[2]	--	--	--	--	Yes
Chloride	mg/L	32	<0.025	230	860[1]	230[3]	--	--	--	250	No
Copper, Total Recoverable	µg/L	4.3	<0.197	1.3	1.3	1.6	1,300	--	--	1,000	Yes
Cyanide, Total (as CN)	µg/L	<2.0	<2.0	5.2	22	5.2	700	220,000	--	--	No
Electrical Conductivity @ 25°C	µmhos/cm	325[4]	25[4]	900	--	--	--	--	--	900	No
Lead, Total Recoverable	µg/L	<0.038	<0.038	0.17	4.4	0.17	--	--	--	15	No
Nitrate, Total (as N)	mg/L	18	<0.0050	10	--	--	--	--	--	10	Yes[5]
Nitrite, Total (as N)	mg/L	0.63	<0.0040	1.0	--	--	--	--	--	1.0	Yes[5]
N-Nitrosodimethylamine	µg/L	0.012	<0.000962	0.00069	--	--	0.00069	8.1	--	--	No[5]
Sulfate	mg/L	17[4]	<0.060	250	--	--	--	--	--	250	No
Total Dissolved Solids	mg/L	200[4]	27[4]	500	--	--	--	--	--	500	No
Zinc, Total Recoverable	µg/L	43	<1.235	17	17	17	--	--	--	5,000	Yes

General Note: All inorganic concentrations are given as a total recoverable.
MEC = Maximum Effluent Concentration
B = Maximum Receiving Water Concentration or lowest detection level, if non-detect
C = Criterion used for Reasonable Potential Analysis
CMC = Criterion Maximum Concentration (CTR or NTR)
CCC = Criterion Continuous Concentration (CTR or NTR)
Water & Org = Human Health Criterion for Consumption of Water & Organisms (CTR or NTR)
Org. Only = Human Health Criterion for Consumption of Organisms Only (CTR or NTR)
Basin Plan = Numeric Site-specific Basin Plan Water Quality Objective
MCL = Drinking Water Standards Maximum Contaminant Level

Footnotes:
(1) U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 1-hour average.
(2) U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 30-day average.
(3) U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 4-day average.
(4) Represents the maximum observed annual average concentration for comparison with the MCL.
(5) See section IV.C.3 of the Fact Sheet for a discussion of the RPA results.

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ATTACHMENT H – CALCULATION OF WQBEL'S

Human Health WQBEL's Calculations										
Parameter	**Units**	**Criteria**	**Maximum Background Concentration**	**CV Eff[1]**	**Dilution Factor**	**AWEL/AMEL Multiplier**	**AMEL Multiplier**	**AMEL**	**MDEL**	**AWEL**
Nitrate Nitrogen, Total (as N)	mg/L	10	<0.0050	0.60	3.0	1.73	1.55	40	--	69

[1] Coefficient of Variation (CV) was established in accordance with section 1.4 of the SIP.

Aquatic Life WQBEL's Calculations																	
Parameter	**Units**	**Criteria**		**B**	**CV Eff[1]**	**Dilution Factors**		**Aquatic Life Calculations**							**Final Effluent Limitations**		
		CMC	**CCC**			**CMC**	**CCC**	**ECA Multiplier$_{acute}$**	**LTA$_{acute}$**	**ECA Multiplier$_{chronic}$**	**LTA$_{chronic}$**	**AMEL Multiplier$_{95}$**	**AWEL Multiplier**	**MDEL Multiplier$_{99}$**	**AMEL[2]**	**AWEL[3]**	**MDEL[4]**
Ammonia Nitrogen, Total (as N)	mg/L	2.14	5.08	0.086	0.60	12	38	0.321	8.60	0.780	152[5]	1.55	2.68	--	13	23	--
Copper, Total Recoverable	µg/L	1.6	1.3	<0.197	0.60	12	38	0.321	5.9	0.527	23	1.55	--	3.11	9.2	--	18
Zinc, Total Recoverable	µg/L	17	17	<1.235	0.60	12	38	0.321	66	0.527	326	1.55	--	3.11	100	--	210

[1] CV was established in accordance with section 1.4 of the SIP.
[2] Average Monthly Effluent Limitations are calculated according to section 1.4 of the SIP using a 95th percentile occurrence probability.
[3] Average Weekly Effluent Limitations are calculated according to section 1.4 of the SIP using a 98th percentile occurrence probability.
[4] Maximum Daily Effluent Limitations are calculated according to section 1.4 of the SIP using a 99th percentile occurrence probability.
[5] The LTA corresponding to the 30-day CCC was calculated assuming a 30-day averaging period and a monthly sampling frequency (n) of 30.

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